Goddard Procedural Requirements (GPR)

DIRECTIVE NO.	GPR 1280.1C	**APPROVED BY Signature:**	*Original Signed By M. Ryschkewitsch*
EFFECTIVE DATE:	February 14, 2006	**NAME:**	Edward J. Weiler
EXPIRATION DATE:	February 14, 2011	**TITLE:**	Director

COMPLIANCE IS MANDATORY

Responsible Office: 170/Office of Mission Success

Title: The GSFC Quality Manual

Table of Contents

PREFACE

P.1 PURPOSE

The purpose of the GSFC Quality Manual is to define the Management System (MS) as implemented at the Goddard Space Flight Center (GSFC) at Greenbelt, Maryland, and at Wallops Flight Facility (WFF), Wallops Island, Virginia.

P.2 APPLICABILITY

The Quality Manual applies to all organizational elements for the performance of work that is in-scope to the MS and the Center's certification to ANSI/ISO/ASQ Q9001-2000.

P.3 AUTHORITY

NPD 1280.1, NASA Management System Policy

P.4 REFERENCES

a. ANSI/ISO/ASQ Q9001-2000, Quality Management Systems – Requirements (referred to herein as ISO 9001-2000)
b. ANSI/ISO/ASQ Q9000-2000, Quality Management Systems – Fundamentals and Vocabulary
c. NPD 1000.0, Strategic Management and Governance Handbook
d. GPR 1060.1, Management Responsibility
e. GPR 1060.2, Management Review and Reporting for Programs and Projects
f. GPR 1410.1, Directives Management
g. GPR 1440.8, Records Management
h. Form GSFC 4-42, GSFC Management System (MS) Requirement Deviation/Waiver Request

P.5 CANCELLATION

GPG 1280.1B, The GSFC Quality Manual

P.6 SAFETY

MS safety requirements are identified as appropriate in governing directives and procedures.

P.7 TRAINING

Specific training requirements are identified as appropriate in governing directives and procedures.

P.8 RECORDS

Record Title	Record Custodians	Retention
Approved waivers and deviations of Center MS requirements (e.g., GPD or GPR requirements) on Form GSFC 4-42	(1) MS Management Representative (MSR); (2) Individual or Organization that requested the waiver	(1)*NRRS 1/26.5A - Destroy when 7 years old. (2)) NRRS 1/26.5B – Destroy when 3 years old or when no longer needed, whichever is sooner.
Approved waivers or deviations of Directorate or sub-Directorate MS requirements (e.g., PG or WI requirements)	(1) Organization that approved the waiver; (2) Individual or organization that requested the waiver	(1)*NRRS 1/26.5A - Destroy when 7 years old. (2)) NRRS 1/26.5B – Destroy when 3 years old or when no longer needed, whichever is sooner.

** NRRS – NASA Records Retention Schedules (NPR 1441.1)*

Other MS records are identified as appropriate in governing directives and procedures.

P.9 METRICS

MS metrics are identified as appropriate in governing directives and procedures.

P.10 DEFINITIONS

Unless otherwise addressed herein, the definitions given in ANSI/ISO/ASQ Q9000-2000 apply to the implementation of the MS. The following additional definitions are provided to assist in the understanding and application of the MS:

a. Contractor - A non-federal entity that provides goods or services to GSFC under a purchase order or contractual arrangement.

b. Customer - The recipient of a product or service provided by GSFC. For purposes of the MS, a customer is assumed to be external to NASA. NASA organizations with which GSFC transacts business are considered to be internal customers for purposes of the MS.

c. Customer Agreement - Space Act Agreement, Program or Project Plan, Research Plan, or any similar commitment entered into by GSFC to deliver a product or service.

d. Deviation - An allowance for a departure from a requirement or specification before the departure has occurred.

e. Exclusion – An exception granted to the Product Realization provisions of ISO 9001-2000.

f. Executive Council - Collectively, the Heads of all of the Directorates and Functional Offices that report to the Center Director.

g. Goddard Directives Management System (GDMS) - The electronic system that maintains the collection of directives and associated forms issued by GSFC along with the procedures for establishing and maintaining such collection.

h. Performing Organization - The GSFC organization (directorate, functional staff office, project, etc.) that is assigned the responsibility of producing a product or otherwise satisfying a customer's requirement.

i. Product – As used in this document, systems, hardware, software, data, documentation, services and/or processed material resulting from work activities at GSFC that have been defined to be in-scope to the MS.

j. Product Design Lead (PDL) - The manager or leader with overall responsibility for managing the product design activity.

k. Product Manager - The individual designated as having management responsibility for a product.

l. Management System Council (MSC) - A group of representatives from each GSFC Directorate, chaired by the MS Representative (MSR), responsible for advising the MSR regarding MS administration, maintenance, and status reporting.

m. Management System Representative (MSR) - A GSFC manager, designated by and reporting directly to the Center Director, who has responsibility and authority for the effective implementation of the MS.

n. Supplier - An organization that provides a product or service to GSFC.

o. Waiver – An allowance for a departure from a requirement or specification after the departure has occurred.

PROCEDURES

In this document, a requirement is identified by "shall," a good practice by "should," permission by "may" or "can," expectation by "will," and descriptive material by "is."

1. MANAGEMENT SYSTEM

1.1 General

This manual and supporting MS directives and procedures identify the MS processes and their application throughout GSFC. The MS provides a framework whereby the sequence and interaction of processes are defined and accomplished. As a reference aid, the Office of Mission Success maintains a listing of the top-level directives established for the MS showing the correspondence between the ISO

requirements and the GPRs that describe the GSFC processes. This reference aid is accessible via the GSFC MS web page. The interaction of the MS processes is depicted in Figure 1.

1.2 Documentation

1.2.1 General

The MS includes:

a. The GSFC Quality Policy and statements of objectives (see 2.3 and 2.4);

b. This Quality Manual;

c. Documented procedures required by the ISO 9001:2000 standard and by GSFC to ensure the effective planning, operation and control of processes; and

d. Records (as identified in governing directives)

1.2.2 Scope of the MS

The scope of the MS and the GSFC ISO 9001 certification includes all products resulting from the following GSFC core processes. The scope also includes the infrastructure needed to achieve conformity to product requirements, as established in the GDMS, or as otherwise documented in writing by the responsible Director of (e.g., Project Plans).

a. Science Enabling - This includes the grants process; providing data to the science community; science support tools; the proposal support process; and the science research process.

b. Technology Development - This includes the technology research and development management process; mission-specific products; technology transfer process; and technology commercialization.

c. Systems Development - This includes space flight systems; sounding rocket, aircraft and balloon carrier systems; and ground-based mission operating and data acquisition systems. Sounding rocket and balloon experiment payload development is included where external commitments exist or where needed to meet the safety, interface control, or operational requirements of the carrier systems.

d. Program/Project Management - This includes cost, schedule and technical control; review and reporting; procurement; mission operations; and safety and mission assurance.

e. Communicate Knowledge - This includes the research publication process and the maintenance of those databases accessible to the public whereby the results of GSFC research are shared.

There are no exclusions to the Product Realization requirements of ISO 9001-2000.

1.2.3 Control of Documents

The documents that implement the MS are consistent with Government and Agency requirements and regulations. The range and detail of procedures is dependent upon the complexity of the work methods used and the skills and training needed to carry out activities in accordance with GPR 1410.1.

GSFC has established and documented procedures to control all Center-generated and external documentation and data. Goddard Policy Directives (GPDs), Goddard Procedural Requirements (GPRs), Procedures and Guidelines (PGs), and Work Instructions (WIs) are prepared and maintained within the GDMS. Documents or data that define requirements, plans, or design, build, interface, and production information are controlled documents subject to approval before issuance or alteration.

1.2.4 Control of Records

GSFC has established and documented procedures for the identification, storage, protection, retrieval, retention and disposition of records, including pertinent records from GSFC customers and suppliers, in accordance with GPR 1440.8.

2. MANAGEMENT RESPONSIBILITY

2.1 Management Commitment

The Center Director and Executive Council are committed to the development, implementation and continual improvement of the effectiveness of the MS. The quality policy established in this Quality Manual has the principle objective to enhance GSFC ability to achieve program, institutional and Agency goals and objectives as stated in the NASA Strategic Plan required by NPD 1000.0.

The Center Director and Executive Council provide evidence of commitment by communicating to the organization the importance of meeting customer as well as statutory and regulatory requirements pertaining to GSFC product, conducting management reviews, and ensuring the availability of resources.

2.2 Customer Focus

Through the conduct of management reviews and established lines of authority, executive management ensures that customer requirements are determined and are met with the aim of enhancing customer satisfaction.

2.3 Quality Policy

GSFC QUALITY POLICY

With Customer Satisfaction as our primary goal:

- GSFC is committed to meeting or exceeding our customers' requirements,
- We achieve excellence in all of our efforts

The GSFC Quality Policy is communicated to personnel via the GSFC MS web page, employee training, MS reviews with executive management, and in our daily activities. The Center Director and Executive Council ensure that the policy is appropriate for the purpose of GSFC, provides a framework for establishing and reviewing objectives, and is reviewed for continuing suitability. Goddard establishes, measures, and achieves its quality objectives, while continually improving the effectiveness of the MS. Every GSFC manager and supervisor involved in work that is applicable to the MS is responsible for ensuring the quality policy is understood, implemented, and maintained at all levels of their organization.

2.4 Objectives

GSFC plays a major role in performing and enabling research in Earth science and space science. The Center develops technology and implements systems and programs that support this role. In addition, GSFC has other responsibilities in the areas of NASA Programs and Missions support, sounding rockets, scientific balloons, and observational science and scientific aircraft missions.

GSFC's Quality Objectives are embodied in the Agency goals and objectives established within the NASA Strategic Plan and/or supporting Implementation Plan(s) required by NPD 1000.0.

Directorates/Offices responsible for work that is within scope of the MS develop objectives and metrics appropriate at their level to support fulfillment of the Center/Agency strategic goals.

Directorate/Offices internally report on objectives measurements, perform appropriate data analysis and initiate improvement actions as warranted.

2.5 Responsibility, Authority and Communication

2.5.1 Responsibility and Authority

The Center Director is given the authority by the Agency to manage all aspects of GSFC within Government and Agency laws and regulations. This includes authority to implement, maintain, and improve the MS. The Center Director has delegated responsibility and authority over the MS to the Executive Council and to all managers and supervisors at the Center.

GSFC is organized into elements called Directorates and Functional Offices. The Directors of and the Functional Office Chiefs make up the Executive Council that provides advice and support to the Center Director for the management of the Center and for the implementation of the MS.

The GSFC organization chart is found in the Organization Manual.

Every GSFC manager and supervisor involved in work under the scope of the MS is responsible for maintaining and implementing the MS within their organizations, including establishing and documenting the necessary procedures, guidelines, and work instructions. This responsibility includes ensuring that their employees operate in compliance with the MS and take appropriate actions when processes do not produce the required quality, and continually seeking to improve processes.

2.5.2 Management System Planning

The Center Director has established a Management System Council (MSC) that consists of representatives from each Directorate and Functional Office. The MSC advises the Management System Representative (MSR) regarding the administration and maintenance of the MS.

Responsibility for the planning of the MS resides with the MSR and the MSC. The MSC ensures that the integrity of the MS is maintained when MS changes are planned and implemented.

The MSC is responsible for the analysis of data, gathered through various tools and efforts, on the implementation and effectiveness of the MS. The purpose of these analyses is to discern trends and opportunities for preventive action or continual improvement initiatives from a Center perspective. The results of these analyses and recommended actions are reported to Center management as part of MS Management Reviews or in more immediate reporting opportunities.

2.5.3 Management System Representative

The Center Director appoints the MSR who is responsible for ensuring that the MS is established, implemented and maintained across the Center. The MSR reports to senior management on the performance of the MS and opportunities for improvement. This reporting process also ensures promotion of awareness of customer requirements throughout the organization. The MSR is responsible for reviewing the GSFC Quality Manual and recommending revisions to ensure the Manual is maintained in a current status.

2.5.4 Internal Communication

Internal communication takes place regularly in accordance with GPR 1060.1 and GPR 1060.2. MS management reviews and resulting actions are accessible to all employees on the MS Home Page.

2.6 Management Review

The MSR reports at prescribed intervals on the continuing suitability, adequacy and effectiveness of the MS to the Center Director and the Executive Council. MS metrics gathered during the reporting period are used to determine necessary improvements to the MS. The MS Management Review process and input are in accordance with GPR 1060.1. Review output consists of actions related to improvement of the MS and its processes, improvement of product related to customer requirements, and resource needs.

3. DEVIATIONS AND WAIVERS

Unless the deviation/waiver process is addressed in the requirement document, the following process shall be employed to request approval of departures from the MS.

3.1 Deviation/waiver requests against a GPR or other Center-level MS requirement shall be documented and processed using GSFC Form 4-42.

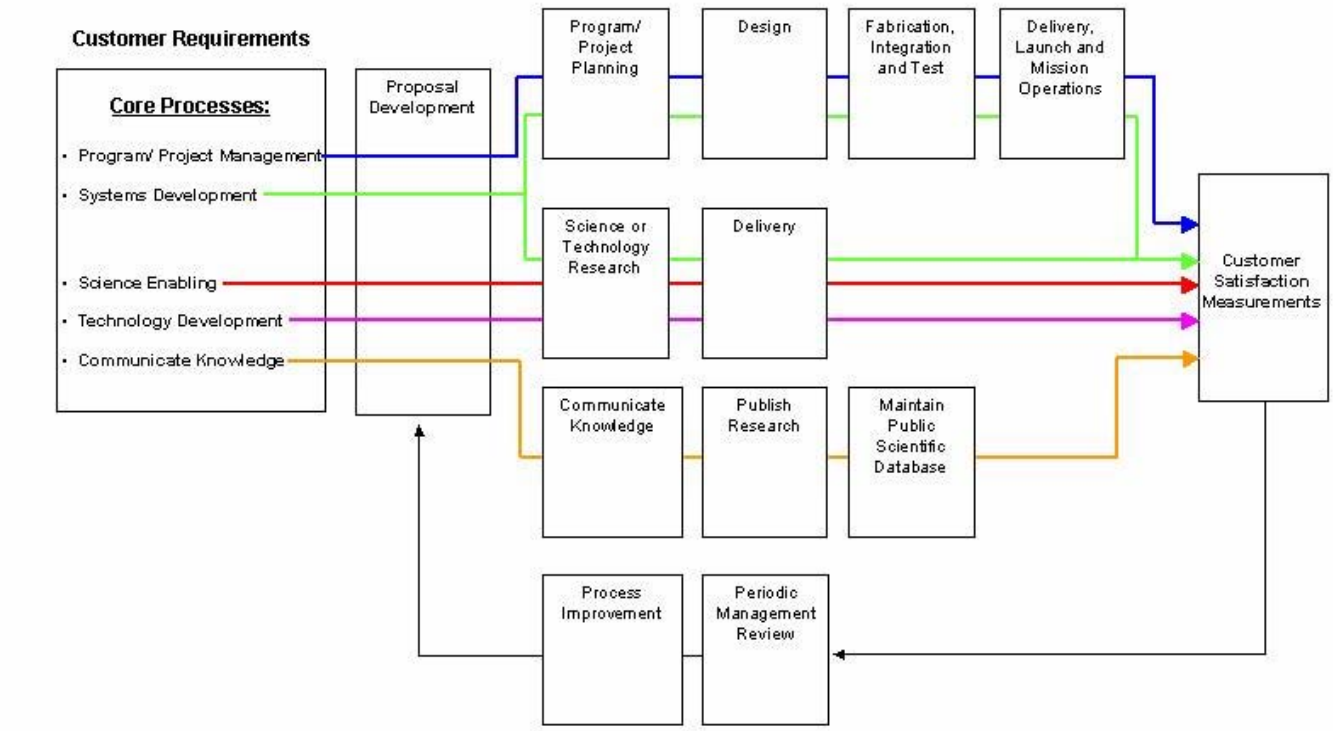
3.2 Deviation/waiver requests involving a PG, WI or other localized MS requirement shall be prepared by the requesting organization for the approval of the authority that established the requirement. Such deviation/waiver requests shall document, at a minimum:

- requirement(s) not being met,
- the reasons for requesting a deviation/waiver,
- alternate procedures or processes that will be used,
- potential effects on product quality.

Non-compliance requests involving localized requirements that may or will result in non-compliance with a Center-level requirement require the use of GSFC Form 4-42.

3.3 In all cases, if a deviation/waiver request involves a directive or process not related to the ISO 9001:2000 “product realization” requirements (section 7 of the standard), the request can be approved only if it does not require an exclusion to the standard. Organizations are not relieved from MS compliance by the existence of a deviation/waiver request which has not been approved, or the intention of submitting such a request. Requesting organizations shall maintain approved deviations and waivers on file as an official record.

Figure 1: Interrelationships Between MS Processes



CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	07/31/03	Entire manual was rewritten in response to ISO 9001:2000 requirements. GPG number changed as a result of release of NPD 1280.1. This baseline version replaces GPG 8730.3D. Substantive changes from GPG 8730.3D are: ▪ Quality policy signature page eliminated. ▪ GSFC organization chart (figure 1) replaced by reference to on-line chart maintained by OHR. ▪ 1.2.2: Language added to align QMS scope with GSFC Strategic Implementation Plan (SIP). First paragraph expanded to address infrastructure considerations. ▪ 1.2.2c: Moved mission operations to this process. ▪ 1.2.2e: Added to align with SIP. ▪ Deleted specific identification of QMSR by position in favor of more flexible description in 2.5.3. ▪ 2.2 added to address ISO 9001:2000 requirement. ▪ 2.4 added to align with SIP and to address ISO requirements with respect to objectives, objectives metrics, and analysis. ▪ 2.5.2 second paragraph added to address data analysis and continual improvement requirements of ISO 9001:2000. ▪ 2.5.4 added to address ISO 9001:2000 requirement. ▪ Section 3 re-written for clarity and visibility. Waivers previously addressed in Quality Planning (4.2.3) of GPG 8730.3D. ▪ Figure 1 added to address, in conjunction with Table 1, ISO 9001:2000 requirement regarding process interaction description. ▪ Table 1 expanded to address correspondence between ISO 9001:2000 requirements and implementing documents. Table correspondence used to eliminate redundant and ISO 9001:1994 related sections 4.2 through 4.20 of GPG 8730.3D.

CHANGE HISTORY LOG (continued)

Revision	Effective Date	Description of Changes
A	07/27/04	▪ P.4(c) title change and hyperlink established. Date left off of Plan title to accommodate future Plan updates without requiring Quality Manual update. ▪ P.8 – Record types separated. Custodians and record retention schedules re-defined. ▪ 1.1 – Deleted sentence "These directives have been updated to conform to ISO 9001-2000". ▪ 2.4 – Rewritten to reflect current GSFC Strategic Implementation Plan mission goals. ▪ Table 1 – Updated titles of GPG 3410.2, GPG 7120.1, and GPG 5340.3. Deleted references to canceled GPG 7120.2.
B	12/29/04	As directed during the FY04 Center Rules Review, the Responsible Office modified this document to remove requirements that were no longer needed and to clearly distinguish requirements from supporting information. Administrative changes were made throughout to correct responsible organization names and codes, and to retitle Goddard Procedures and Guidelines (GPG) to Goddard Procedural Requirements (GPR). All changes were reviewed and approved by the Goddard Quality Management System Council (QMSC).

CHANGE HISTORY LOG (continued)

Revision	Effective Date	Description of Changes
C	02/14/06	• All Quality Management System references changed to Management System. • Deleted all references to the GSFC FY Implementation Plan. • P.4c reference name changed to accommodate changing FY documents. • P.4d reference updated. • P.4e through h added. • P.10a – replaced "…as defined through…" with "…under...". • P.10c – replaced "legal" with "similar". • P.10d added. • P.10o modified. • 1.1 – Third and fourth sentences revised to remove Table 1 from the directive and authorize the Office of Mission Success to maintain a reference list of directives that can be more readily updated to reflect current directives. • 1.2.4 – GPR reference update from 1440.7 to 1440.8. • 2.4 – Section re-written to reflect establishment of NPR 1000.0 and ensuing NASA Strategic Plan in lieu of a Center Implementation Plan. • 2.5.2, second paragraph – Elimination of provision for QMSC advising the QMSR on requests for waivers. • 2.6 – Replaced "semi-annual" with "at prescribed intervals" and inserted "process and" in third sentence. Changes made to reflect detailed changes in GPR 1060.1. • 3 – Re-written to reflect use of GSFC Form 4-42. • Removed Table of QMS Directive Correspondence with ISO requirements to QMS web page to accommodate real-time update.